Food Insufficiency and Material Hardship in Post-TANF Welfare Families

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I. INTRODUCTION

This Article uses a newly available dataset on welfare recipients in Michigan to examine the prevalence and correlates of food insufficiency and material hardship in the new welfare caseload. The authors found that twenty-five percent of recipients report that they sometimes or often did not have enough to eat, and that thirty-six percent experienced one or more of the following hardships: food insufficiency, eviction, homelessness, or having their utilities cut off. The strongest predictors of food insufficiency and/or material hardship were: lack of a high school diploma, low work experience, alcohol and drug dependence, physical health problems, depression, and domestic violence.

The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA)[1] ended the federal guarantee of cash assistance to needy single-parent families and replaced the Aid to Families with Dependent Children program (AFDC)[2] with the Temporary Assistance to Needy Families program (TANF).[3] PRWORA has generated considerable debate over how children in low-income, single-parent families will fare.

On one hand, advocates of welfare reform such as Lawrence Mead,[4] Mickey

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[1] Pub. L. No. 104-93, 110 Stat. 2105 (codified as amended in scattered sections of 42 U.S.C.).

[2] Social Security Act of 1935, ch. 531, tit. IV §§ 401–06, 49 Stat. 620, 627–29, *repealed by* Personal Responsibility and Work Opportunity Act of 1996, Pub. L. No. 104-193, 110 Stat. 2105.

[3] Pub. L. No. 104-93, tit. I, 110 Stat. 2110–85 (1996) (codified as amended in scattered sections of 42 U.S.C.).

[4] *See generally* LAWRENCE M. MEAD, THE NEW POLITICS OF POVERTY: THE NONWORKING POOR IN AMERICA (1992).

Kaus,[5] and Robert Rector[6] argue that dependency, not a lack of material resources, is the major problem plaguing today's poor families. According to Mead, "nonwork is [] the most significant aspect of poverty.... Non-work constitutes the core of the social problem."[7] Such arguments imply that PRWORA's work requirements and time limits will reduce non-work and time spent on welfare and therefore children will benefit.

On the other hand, critics of welfare reform argue that PRWORA removes the federal safety net for poor families and that many poor children might experience considerable material hardship as a result.[8] Mary Jo Bane, a Clinton appointee who resigned in protest after PRWORA was signed, expressed concern that "[t]he old welfare system... provided for children with minimal but continuous assistance. The new welfare system will no longer do this."[9] Peter Edelman, another Clinton appointee who also resigned in response to the bill's passage, claims that PRWORA is *The Worst Thing Bill Clinton Has Done*[10] and argues that the new welfare law may cause "[s]erious injury to American children."[11] Earnestine Willis and others argue that one side effect of welfare being replaced by low paying, entry-level employment is that for most families there is a net loss of spendable income.[12] In addition, they argue that as welfare-to-work programs are implemented, the purchasing power of families will be weakened, with dire nutritional consequences for children.[13]

There are several reasons we suspect these critics are correct and that children in the current welfare caseload may experience material hardships. First, some recipients may have their benefits reduced or terminated for failure to comply with work requirements. Others who are complying with the work requirements may lose benefits when they reach the expiration of the time limits. In cases in which benefits cuts cannot be replaced by alternative sources of income, recipients may be unable to provide for their families' basic needs.

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[5] *See* Mickey Kaus, *The Work Ethic State*, NEW REPUBLIC, July 7, 1986, at 22, 24–26 ("[A]lthough welfare might not *cause* the underclass it sustains it.... Welfare... permits the expansion of this single-parent culture.").

[6] *See* ROBERT RECTOR & WILLIAM F. LAUBER, HERITAGE FOUND., AMERICA'S FAILED $5.4 TRILLION WAR ON POVERTY 44 (1995) (arguing that a reformed welfare system must "discourage dependency and irresponsible behavior....").

[7] MEAD, *supra* note 4, at 15.

[8] *See* Mary Jo Bane, *Welfare as We Might Know It*, THE AM. PROSPECT, Jan-Feb. 1997, at 53.

[9] *Id.*

[10] Peter Edelman, *The Worst Thing Bill Clinton Has Done*, THE ATLANTIC MONTHLY, Mar. 1997, at 43.

[11] *Id.* at 58.

[12] *See* Earnestine Willis et al., *Welfare Reform and Food Insecurity: Influence on Children*, 151 ARCHIVES OF PEDIATRIC & ADOLESCENT MED. 871, 874 (1997).

[13] *See id.* at 874–75.

Second, caseloads have declined dramatically since 1994.[14] The federal government issued waivers to many states in order to test work requirements and time limits between 1994 and 1996.[15] During this period, Fiscal years 1994–1996, the caseloads declined by almost 14%.[16] From the passage of PRWORA in August 1996 to June 1998, caseloads declined another 32%.[17] These caseload reductions have led some policy analysts and advocates to argue that the remaining welfare caseload may have few personal resources, face higher needs and more constraints (including poor health, depressed psychological functioning, domestic violence, substance abuse, lack of access to transportation).[18] To the extent this is true, recipients may be less equipped to meet their family's needs.

Third, recipients' employment may raise their pretax money income, but because of work-related expenses, such as transportation costs and child care costs, employment may actually lower their disposable income and hence their abilities to meet food, housing, and utility costs.[19]

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[14] *See* Sandra Danziger et al., Institute for Research on Poverty, Barriers to the Employment of Welfare Recipients 1 (June 1999) (unpublished manuscript, on file with author), *available in* <http://www.ssc.wisc.edu/irp/dplist.htm> (visited Nov. 23, 1999).

[15] *See id.* at 1.

[16] *See id.* at 2.

[17] *See id.*

[18] *See, e.g.*, Christopher Jencks, *Forward* to KATHRYN EDIN & LAURA LEIN, MAKING ENDS MEET: HOW SINGLE MOTHERS SURVIVE WELFARE AND LOW-WAGE WORK, at x, xvii–xxi (1997) (noting a welfare recipient returning to work has a greater need for money and is constrained by health problems, lack of job skills, and lack of access to transportation); Alan M. Hershey & LaDonna A. Pavetti, *Turning Job Finders into Job Keepers: The Challenge of Sustaining Employment*, 7 FUTURE CHILDREN 74, 77–80 (1997) (describing four problem areas for welfare recipients: low rewards of working, high cost of working, layoffs and firing by employer, and health and family problems); A. Kalil, et al., Getting Jobs, Keeping Jobs, and Earning a Living Wage: Can Welfare Reform Work? 21 (Institute for Research on Poverty Discussion Paper, no. 1170-98, 1998) (unpublished manuscript, on file with author) (identifying several barriers that may reduce welfare recipients' abilities to keep jobs and reduce their wage growth); *cf.* Danziger, *supra* note 14 at 2 ("[G]iven the large decline in [welfare] caseloads since [the PRWORA] passage, recipients who have not yet entered the workforce are likely to have more of these problems than pre-1996 recipients." These problems consist of "lack of basic work skills and experience, inadequate knowledge of workplace norms, transportation problems, health and mental health problems, substance abuse, and domestic violence.").

[19] *See* KATHRYN EDIN & LAURA LEIN, MAKING ENDS MEET: HOW SINGLE MOTHERS SURVIVE WELFARE AND LOW-WAGE WORK 7 (1997) ("[W]age reliant mothers reported experiencing more material hardship than those who relied primarily on welfare . . ."); *see also* Jencks, *supra* note 18 at x (citing the results of a study by Edin & Lein revealing that between 1988 and 1992, mothers with low wage jobs reported substantially higher incomes than those who collected welfare, but also reported experiencing more hardship); *cf.* CONSTANCE F. CITRO & ROBERT T. MICHAEL, MEASURING POVERTY: A NEW APPROACH, 240–43 (1994) (arguing that work-related expenses should be deducted from income when determining where to set the poverty line).

Despite the lively debate over the consequences of TANF for children, very little is known about how children of welfare recipients are faring in the new system. This Article uses a newly available dataset[20] on a sample of welfare recipients in Michigan to answer the following: (1) how many post-TANF welfare families have difficulties meeting their food, shelter, and utility basic needs?; (2) to what extent do income and work predict food insufficiency and material hardship in the new welfare caseload?; and (3) who in the new caseload is most likely to experience insufficiency and material hardship?

In Part II we review the literature on food insufficiency and material hardship in the welfare population. Part III describes our dataset, sample, variables, and analysis strategy. The results of the study are presented in Part IV. This Part reports that about twenty-five percent of recipients and former recipients occasionally, or even frequently, did not have enough to eat.[21] Further, thirty-six percent experienced one or more of the following material hardships: food insufficiency, eviction, homelessness, or having their utilities cut off.[22] Surprisingly, the reported monthly household income was unrelated both to food insufficiency and material hardship.[23] Evidence shows that working recipients were more likely to consistently meet their families' basic food, shelter, and utility needs than were nonworking recipients. The strongest predictors of recipients' food insufficiency and/or material hardships were lack of a high school diploma, low work experience, alcohol and drug dependence, physical health problems, depression, and domestic violence; this is a concern as many of these factors are often present among recipients.[24] The Article concludes by discussing the post-TANF policy implications.

II. LITERATURE REVIEW

Analyses of food insufficiency tend to fall into two categories. One category of studies focuses on food stamp usage among the welfare population and does not address the issue of food insufficiency itself.[25] A second class of studies conducted by public-health researchers focuses on nutritional outcomes for various levels of food insecurity or insufficiency in the general population or in

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[20] Our dataset, the Women's Employment Survey (WES), is a new survey of welfare recipients in Michigan. We will use it to assess the extent and predictors of unmet food, housing, and utility needs in the post-TANF welfare population. For more information on the study see *infra* Parts III–IV and Appendices.

[21] *See infra* tbl.1.

[22] *See id.*

[23] *See infra* tbl.5.

[24] *See infra* tbl.1.

[25] *See, e.g.*, Rebeeca Blank & Patricia Ruggles, *When Do Women Use Aid to Families with Dependent Children and Food Stamps?: The Dynamics of Eligibly Versus Participation*, 31 J. HUM. RESOURCES 57, 84–86 (1996).

low-income sub-populations, but does not specifically examine welfare recipients.[26] Neither set of studies enables us to gauge the extent of food insufficiency among either the pre-TANF or post-TANF welfare caseloads.

The single greatest predictor of food insecurity and food insufficiency in the general population is a low income.[27] A national survey of hunger and food insecurity released by the United States Department of Agriculture in 1999 found that in 1998 6.6 million adults and 3.4 million children lived in households in which at least some members experienced hunger.[28] The national prevalence rate for hunger in 1998 was 13.5% in households below the poverty line, compared with 3.6% of all households.[29] Additionally, analysis of data from the Third National Health and Nutrition Examination Survey (NHANES) found that the overall prevalence of food insufficiency, sometimes or often not having enough food, was 4.1% and was primarily related to poverty status.[30] In the low-income group, the prevalence of food insufficiency increased to fourteen percent.[31] Even within the low-income group, income was negatively related to food insufficiency.[32] Thus, the relationship between income and food insufficiency is an accepted standard in the literature.

Analysts also report that the incidence of food insufficiency is higher in families headed by individuals with low levels of human capital (education and skills). For example, Katherine Alaimo and others have found that both a family head who had not completed high school and an unemployed family head were

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[26] *See, e.g.*, EDWARD A. FRONGILLO, ET AL., INSTITUTE FOR RESEARCH ON POVERTY DISCUSSION, NUTRITIONAL CONSEQUENCES OF FOOD INSECURITY IN A RURAL NEW YORK STATE COUNTY 16–17 (1997).

[27] *See* Donald Rose, *Economic Determinants and Dietary Consequences of Food Insecurity in the United States*, 129 J. NUTRITION 517, 517 (1999) ("Income is clearly one of the most important determinants of food insecurity and hunger."); *see also* James R. Blaylock & W. Noel Blisard, *Food Security and Health Status in the United States*, 27 APPLIED ECON. 961, 964–65 (1995) (concluding that income is among the variables which most influence levels of food security).

[28] *See* GARY BICKEL ET AL., FOOD & NUTRITION SERV. 1, HOUSEHOLD SECURITY IN THE UNITED STATES 1995–1998, at 1 (1998).

[29] *See id.* at 4.

[30] *See* Katherine Alaimo et al., *Food Insufficiency Exists in the United States: Results from the Third National Health and Nutrition Examination Survey (NHANES III)*, 88 AM. J. OF PUB. HEALTH 419, 420–21, 421 (tbl.1) (1998) (reporting that for nearly all families participating in the Third National Health and Nutrition Examination Survey (NHANES III), food insufficiency resulted from a lack of adequate resources with which to obtain food.) "Nearly all of these families (98.6%) reported the reason for their food insufficiency was a lack of money, food stamps, or vouchers from the Special Supplemental Food Program for Women Infants and Children (WIC)." *Id.*

[31] *See id.* at 421, 421 fig.1.

[32] *See id.* at 422.

significantly related to food insufficiency status in a general population.[33] In another study, Christine Olson has reported that low education level was related to increased risk of food insufficiency in a rural population.[34] In addition, analyses of panel data on food insufficiency show that losing a job is associated with food insufficiency.[35]

Perhaps individuals with low education levels, little work experience, or few work-related skills lack the money-management skills necessary to stretch a tight budget throughout the month in a way that ensures all household members have their basic needs met. We believe that another possibility is that individuals with lower human capital levels have a harder time negotiating with the bureaucracies of private charities and state welfare offices, or are less successful at entrepreneurial attempts to obtain extra income. From qualitative interviews, Kathryn Edin and Laura Lein detail the multi-faceted coping mechanisms that low-income women must develop to meet their family needs.[36] Although the mechanisms remain somewhat vague, ample evidence suggests that those with lower human capital levels might be at greater risk of food insufficiency.

In addition, A. Kalil and others as well as Alan Hershey and LaDonna Pavetti have argued that many welfare recipients face constraints such as mental health problems, physical health problems, substance dependence, domestic violence, and lack of access to transportation.[37]

Rates of physical health problems are disproportionately high among low-income populations and welfare recipients.[38] Women on welfare are about twice

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[33] *See id.* at 421, 423 tbl.3.

[34] *See* CHRISTINE M. OLSON ET AL., INSTITUTE FOR RESEARCH ON POVERTY, FACTORS CONTRIBUTING TO HOUSEHOLD FOOD INSECURITY IN A RURAL UPSTATE NEW YORK COUNTY 16 (1996) (reporting that rural women with higher levels of education had "significantly larger food inventories").

[35] *See* Rose, *supra* note 27, at 517 ("Panel data indicate that those who are often food insufficient are much more likely than food-sufficient households to have experienced recent events that stress household budgets such as losing a job, gaining a household member or losing food stamps.").

[36] *See* EDIN & LEIN, *supra* note 20, at 143–91 (providing a study of the strategies employed by low-income women in order to meet their expenses). Participants reported employing a combination of methods to meet the needs of their families. Most women preferred receiving assistance from personal networks including their families, the fathers of their children, or their boyfriends. Furthermore, many women reported that they supplement their incomes with some combination of income from formal work, informal work, welfare, public agencies, private charities, and illegal activity. *See id.*

[37] *See* Hershey & Pavetti, *supra* note 18, at 77–80 (reporting on the factors contributing to job loss among female welfare recipients including physical health problems, domestic violence, and inadequate transportation); Danziger et al., *supra* note 14, at 17 (identifying 14 potential barriers to work including limited education, little work experience, and few job skills); Kalil et al., *supra* note 18, at 3 (describing nine sets of potential barriers to employment).

[38] *See* Danziger et al., *supra* note 14, at 16.

as likely to report physical limitations and are three to five times as likely to report their general health as fair or poor.[39] James R. Blaylock and W. Noel Blisard further report that food security status is positively and significantly correlated with a woman's self-evaluated health status.[40]

Most mental health disorders are negatively correlated with socio-economic status.[41] The rate of major depression among welfare recipients, approximately twenty-five percent,[42] is more than twice as high as that in the general population,[43] and the rate of posttraumatic stress disorder, about fourteen percent for a twelve-month diagnosis,[44] is higher than the lifetime prevalence rate in the general population.[45] Recent studies of welfare recipients have documented that current rates of severe physical abuse among the welfare population range from ten to thirty-one percent.[46] This is three to five times the rate of severe physical abuse among women in the general population.[47]

There is mixed evidence on the extent of substance abuse among welfare recipients. Estimates of prevalence of substance abuse range widely from 4.9% to 37.0%, depending in large part on the measure used.[48] In addition, analysis of data from the National Longitudinal Alcohol Epidemiological Survey found that the percentages of female welfare recipients who met the DSM-IV criteria for

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[39] *See id.*

[40] *Cf.* Blaylock & Blisard, *supra* note 27, at 965 ("Women with incomes 50% above the average are 4.5%age [sic] points more likely to be in excellent health than women with incomes one-half the mean.").

[41] *See* Ronald C. Kessler et al., *Lifetime and 12-Month Prevalence of DSM-III-R Psychiatric Disorders in the United States: Results from the National Comorbidity Survey*, 51 ARCHIVES GEN. PSYCHIATRY 8, 8, 15 tbl.5, 17 (1994); *see generally* William A. Anthony & Andrea Blanch, *Supported Employment for Persons Who Are Psychiatrically Disabled: An Historical and Conceptual Perspective*, 11 PSYCHOSOCIAL REHABILITATION J. 5 (1987) (suggesting that mentally disabled people do not reap the economic benefits of work).

[42] *See* Danziger et al., *supra* note 14, at 15 tbl. 5, 16.

[43] *See* Ronald C. Kessler, et al., *Comorbidity of DSM-III-R Major Depressive Disorder in the General Population: Results From the US National Comorbidity Survey*, 168 BRITISH J. PSYCHIATRY 17–30 (1996) (reporting the NCS 12 month prevalence estimates for MDD among women to be 11%).

[44] *See* Danziger et al., *supra* note 14, at 15 tbl. 5, 16.

[45] *See* Ronald C. Kessler, et al., *Posttraumatic Stress Disorder in the National Comorbidity Survey*, 52 ARCHIVES GEN. PSYCHIATRY 1048–60 (1995) (reporting that the lifetime prevalence rate for PTSD is 10% for women in the general population).

[46] *See* Telephone Interview with Professor Richard Tolman, Associate Professor, University of Michigan School of Social Work (Mar. 7, 1999).

[47] *See* Danziger et al., *supra* note 14, at 17 ("About 15 percent of the women reported being severely physically abused . . . . This rate is four to five times the national average . . . .").

[48] *See* CHRISTINE A. OLSON & L. PAVETTI, URBAN INST., PERSONAL AND FAMILY CHALLENGES TO THE SUCCESSFUL TRANSITION FROM WELFARE TO WORK 3 (1996).

abuse or dependence on alcohol or drugs were 7.3% and 3.3% respectively.[49]

Two different mechanisms may be operating that could make it more difficult for women with such constraints to manage their monthly budgets. First, women facing such constraints may have greater needs. Accordingly, they may spend a greater share of their resources on items such as medicine, alcohol, or transportation expenses. This leaves less money for food consumption. Second, these constraints may pose a problem to obtain food or managing a monthly budget. Both the woman who literally cannot get to a grocery store because of physical illness or transportation difficulties and the woman who is too depressed or afraid of running into an abuser to leave the house may face these problems.

Remarkably few studies have examined the extent of material hardship in low-income and welfare populations. Two key studies on this topic are Mayer and Jencks[50] and Edin and Lein.[51] Mayer and Jencks conducted two surveys of representative samples of non-Hispanic white and black Chicago residents that asked whether families could afford food, housing, and medical care.[52] Mayer and Jencks's measure of material hardship was based on unmet food, housing, and medical needs as well as on housing problems.[53] Mayer and Jencks reported that while family income was the strongest single predictor of material hardship, income accounted for only fourteen percent of the variance in the hardship measure.[54] Other strong predictors of material hardship included family composition, health, and family size—all measures of a family's need for income.[55] Mayer and Jencks further reported that the number of years of schooling are associated with fewer hardships, but that family income is a much stronger predictor of hardship than is education of a household head.[56]

Edin and Lein compared material hardships across two samples of low-income single mothers—one in which the mothers' primary source of income was work and one in which the mothers' primary source of income was

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[49] *See* Bridget F. Grant & Deborah A. Dawson, *Alcohol and Drug Use, Abuse, and Dependence Among Welfare Recipients*, 86 AM. J. PUB. HEALTH 1450, 1451 tbl.1, 1452 tbl. 3 (1996).

[50] *See generally* Susan E. Mayer & Christopher Jencks, *Poverty and the Distribution of Material Hardship*, 24 J. HUM. RESOURCES 88 (1989) (reporting the results of a study on the relationship between poverty and material hardship).

[51] *See* EDIN & LEIN, *supra* note 19, at 1–19 (discussing the background and design of a 1997 study by Edin and Lein which examined the plight of low income mothers across four major U.S. cities: Chicago, Illinois; Boston, Massachusetts; San Antonio, Texas; and Charleston, South Carolina).

[52] *See* Mayer & Jencks, *supra* note 50, at 90–91.

[53] *See id.* at 92–94, tbl.1 (providing a list of the items Mayer & Jencks used to measure material hardship).

[54] *See id.* at 111.

[55] *See id.* at 104.

[56] *See id.* at 100.

welfare.[57] They developed two composite measures of material hardship based on unmet food, housing, medical and clothing needs, housing quality, utility cut off, and dwellings (either private, public, or shared housing).[58] On both composite measures, wage-reliant mothers averaged higher levels of material hardship than did welfare-reliant mothers even though wage-reliant mothers had higher average incomes than did welfare-reliant mothers.[59] This suggests that moving recipients from welfare to work might actually increase children's material hardships. However, Edin and Lein did not examine the determinants of material hardship in their samples.

A closer inspection of Edin and Lein's analyses shows that their finding—that working single mothers averaged higher levels of hardship, was because wage-reliant recipients were much less likely to have health care benefits for themselves and their children[60] and much more likely to have reported not having seen a doctor when they needed to because of a lack of money.[61] Relative to welfare-reliant mothers, wage-reliant mothers were less likely to report having no food in the house, going hungry, being homeless, or living in public housing. Moreover, they were no more likely to report housing quality problems or having utilities cut off. Finally, they were slightly more likely to report not having enough winter clothes, not having a phone, or living in shared housing.[62]

Remarkably little is known about the prevalence and correlates of either food insecurity or material hardship in the post-TANF welfare population. Past research suggests that income, human capital, family size, family structure, and health status predict food insecurity and material hardship in the general population.[63] There is suggestive evidence that work may be positively correlated with material hardship for low income single pre-TANF mothers.[64] There is also some evidence that the rates of physical health problems, mental health problems, domestic abuse, and lack of access to transportation are high in pre-TANF and post-TANF welfare populations, and mixed evidence on the prevalence of alcohol

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[57] *See* EDIN & LEIN, *supra* note 19, at 11.

[58] *See id.* at 57–58.

[59] *See id.* at 113 tbls.4–9.

[60] *Cf. id.* at 117–18 ("These differences [i.e.,working mothers reported experiencing more hardships than nonworking mothers receiving welfare] were due entirely to differences in health care.").

[61] *See id.* at 113 tbls.4–9.

[62] *See id.*

[63] *See, e.g.*, Mayer & Jenks, *supra* note 33, at 111 ("The . . . data suggest that variations in 'need,' [considering factors such as family size and structure and health] explain at least as much of the variation in hardship as variations in resources.").

[64] *See* EDIN & LEIN, *supra* note 20 at 117 ("When we compare the material well-being of welfare and wage-reliant mothers, we find that, on balance, working mothers were worse off than those who received welfare . . . .").

and drug dependence in these populations.[65] It is possible that such problems will make it difficult for welfare recipients to adequately provide for their families' food and shelter needs. However, to our knowledge, no analysts have directly explored the links between these problems and unmet food and shelter needs in the post-TANF welfare population. This Article will extend past research by documenting the extent and predictors of food insecurity and material hardship in Michigan's post-TANF welfare population.

III. DATA SAMPLE, MEASURES, AND RESEARCH STRATEGY

A. *Data and Sample*

Our study, entitled the Women's Employment Survey (WES), uses a new survey of welfare recipients in Michigan to assess the extent and predictors of unmet food, housing, and utility needs in the post-TANF welfare population. WES interviews, lasting about one hour, were completed between August and December 1997 and consisted of a random sample of 753 single mothers with children who were welfare recipients in an urban Michigan county as of February, 1997. At the time of the survey seventy-two percent of the sample continued to receive cash welfare benefits. Michigan's Family Independence Agency provided names and addresses of all single parent cases and a stratified random sample was then drawn. Completed interviews represent an eighty-six percent response rate.

The WES improves on past surveys of food insecurity among low-income populations in three respects. First, interviews were conducted after Michigan redesigned its cash assistance program to meet the requirements of the 1996 Personal Responsibility and Work Opportunity Act. We present one of the first insights into the extent of food insecurity and material hardship for a welfare population facing a new work requirement. Second, because our data come from a random sample of welfare recipients with an unusually high response rate, we can be sure that our results are representative of the post-TANF welfare population. Third, we are able to examine a much broader array of potential correlates of food insecurity and material hardship than have previous researchers. WES collected data on food insecurity, material hardship, work and welfare histories, income, demographic characteristics, mental and physical health, substance dependence, domestic violence, and access to transportation.

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[65] *See, e.g.*, Olson & Pavetti, *supra* note 50, at 30 (reporting that the estimate of substance dependence in the welfare population ranges from 4.9% to 37%); Danziger et al., *supra* note 14 at 14–17 ("Recipients are much less likely to have graduated from high school and much more likely to have experienced transportation problems, mental health problems, physical health problems, child health problems, and severe physical abuse than women in the general population.").

B. *Variables*

We construct two dependent variables. The first is a dummy variable measuring whether respondent has experienced food insufficiency. Respondents were coded as "1" on this variable if they responded that they "sometimes" or "often" did not have enough food when asked: "Which of the following describes the amount of food in your household?: Enough, Sometimes Not Enough, Often Not Enough." This measure is also used in the Current Population Survey and the Third National Health and Nutrition Examination Survey (NHANES III).[66]

Our second outcome measure, whether the respondent has experienced material hardship, is coded as a "1" if respondent had experienced one or more of the following: food insufficiency, an eviction within the last year, homelessness within the last year, a utilities cut-off within the last year. This measure of material hardship, however, is more restricted than those used by Mayer and Jencks[67] and Edin and Lein.[68] Those authors included measures of unmet health care needs, lack of health insurance, and problems in the quality of housing in their hardship measures.[69]

We include three categories of independent variables: demographic characteristics, work and human capital, and constraints. Our demographic measures include: whether African-American, age (in years), number of adults in the household, number of children in the household, number of years received welfare, and total monthly income from all sources (in dollars). The income variable measures the economic resources available to the family. The numbers of adults and children provide a rough measure of household needs as well as the possible number of bread-winners present.

We include four work and human capital measures: whether employed twenty or more hours per week, whether a high-school dropout, whether has low work experience, and whether has less than four job-related skills. A respondent is considered to have low work experience if she worked in less than twenty percent of the years since she turned age eighteen. Respondents were asked which of the following nine tasks they had performed on a daily or weekly basis in previous jobs: work with a computer, write letters or memos, watch gauges, talk with customers face to face, talk with customers on the phone, read instructions, fill out forms, do arithmetic, work with electronic machines. If a respondent had performed less than four of these tasks on a regular basis, she was classified as having a barrier.

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[66] *See generally* Alaimo et al., *supra* note 30 (providing a discussion of the method, results, and implications of the NHANES III).

[67] *See* Mayer & Jencks, *supra* note 50.

[68] *See* EDIN & LEIN, *supra* note 19.

[69] *See id.* at 57–58; *see also* Mayer & Jencks, *supra* note 50, at 92–94 tbl.1.

We also include a number of measures of factors that might constrain a respondent's ability to provide for her family and/or increase her family need for economic resources: physical health problems, mental health problems, substance abuse, domestic violence, and access to transportation. We measured health status as follows: sample members were asked to rate their general health and physical limitations using questions from the SF-36 Health Survey's General Health and Physical Role Functioning Subscales.[70] Respondents who rated their general health as poor or fair *and* who scored in the lowest age-specific quartile of the multiple-item physical functioning scale (based on national norms) were defined as having a health problem.

Mental health and substance dependence were assessed with diagnostic screening batteries for a 12-month prevalence of four psychiatric disorders as provided in the Diagnostic and Statistical Manual, revised third edition (DSM-III-R)[71]—major depression,[72] post-traumatic stress disorder (PTSD),[73] alcohol dependence,[74] and drug dependence.[75] Questions come from the Composite International Diagnostic Interview (CIDI) used in the National Comorbidity Survey (NCS), the first nationally representative survey to administer a structured psychiatric interview.[76] The items in each of the four batteries are scored for clinical caseness, and all respondents who meet the scale criteria are defined as having the disorder.

Domestic violence is measured by the Conflict Tactics Scale (CTS), a widely-used measure of family violence.[77] We defined the barrier from the items indicating current (past twelve months) severe physical abuse. This sub-scale indicates whether the respondent has been hit with a fist or object, beaten, choked, threatened with a weapon, or forced into sexual activity against her will.

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[70] *See generally* John E. Ware, Jr. & Cathy Donald Sherbourne, *The Mos 36-Item Short-Form Health Survey (SF-36)*, 30 MEDICAL CARE 473, 473 (1992).

[71] *See generally* AMERICAN PSYCHIATRIC ASSOC., DIAGNOSTIC & STATISTICAL MANUAL OF MENTAL DISORDERS (3d. ed. 1987).

[72] *See id.* at 135.

[73] *See id.* at 146–48.

[74] *See id.* at 107–09.

[75] *See id.* at 107–10.

[76] *See* Kessler et al., *supra* note 41, at 8–9 (describing the interview process and diagnostic assessment used to conduct the NCS).

[77] *See* MURRAY A. STRAUS & RICHARD J. GELLES, PHYSICAL VIOLENCE IN AMERICAN FAMILIES: RISK FACTORS AND ADAPTATIONS TO VIOLENCE IN 8,145 FAMILIES, at 5 (1990) ("The CTS is now the most widely used method of obtaining data about physical violence in families."); *see also* Murray A. Straus & Richard J. Gelles, *Societal Change and Change in Family Violence from 1975 to 1985 as Revealed by Two National Surveys*, 48 J. MARRIAGE & FAM. 465, 467 (1986) ("This instrument has been used and refined in numerous studies of family violence.").

Finally, we consider a respondent to have a transportation problem if she lacks access to a car and/or she does not have a driver's license.

C. *Research Strategy*

The analysis sample is the 733 respondents who have no missing data on any of the variables described in the previous section. We explore correlates of food insufficiency and material hardship by estimating equation (1), which expresses food insufficiency (or material hardship) as a function of demographic characteristics, work and human capital, and constraints (physical health, mental health, substance dependence, etc.).

$$(1)\quad Y = B_0 + \sum_{i=1}^{7} B_i X_i + \sum_{j=1}^{4} \gamma_j HC_j + \sum_{k=1}^{7} \theta_k C_k + u$$

Y = 1 if food insufficient (or materially hard up).
0 if otherwise.

X = demographic control measures (age, race, number of children, number of adults, years received welfare, family monthly income, whether received welfare last month).

HC = work and human capital measures (employed twenty or more hours, is high school dropout, has low work experience, has less than four job skills).

C = constraint measures (has a physical health problem, is depressed, has PTSD, is drug dependent, is alcohol dependent, has experienced severe physical abuse, lacks a car and/or license).

We estimate equation (1) using logistic regression in two stages. First, we regress our measure of food insufficiency (material hardship) on the demographic controls and the work and human capital measures. This is similar to specifications used in prior studies of food insufficiency. Second, we regress the outcome measures on the full set of demographic, work, human capital, and constraint measures. This study is one of the first to examine whether factors such as physical health problems, mental health problems, substance dependence, domestic violence, and lack of access to transportation are correlated with food insufficiency and material hardship.

IV. RESULTS

A. *Sample Description*

Table 1 reports the means for the outcome and predictor variables. There are considerable unmet food and housing needs in the Michigan post-TANF welfare population. In our sample, 24.4% of welfare recipients met the criteria for food

insufficiency. This rate is almost 6 times higher than that in the general population, 4.1%, [78] and almost twice as high as that found in other studies of low-income households, 14%.[79] Rates of material hardship in the post-TANF welfare population are also high. About thirty-six percent of our sample reported experiencing one or more of the following events: sometimes not having enough food, being evicted, being homeless, or having utilities cut off. We cannot directly compare our hardship measure to those used by Mayer and Jencks[80] or Edin and Lein[81] because their measures were constructed quite differently. For instance, we asked about evictions, homelessness, and utility cutoffs experienced in the last twelve months. Edin and Lein, however, asked about more events, asked if recipients had *ever* experienced each of these events, and added up the number of types of hardships experienced. [82]

Fifty-six percent of the women in our sample are African-American, and forty-four percent are white. Not surprisingly, the sample is young; the mean age is 29.8 years. The average number of adults in a sample household is 1.5, and the average number of children is 2.1. The average respondent has received welfare for 7.3 years and has an income of $1,245 per month.

About fifty-eight percent of the sample were working twenty more hours per week at the time of the interview.[83] Many respondents had low levels of human capital. About thirty-one percent were high school dropouts, fifteen percent had very low work experience, and twenty-one percent had fewer than four of the nine work skills we asked.

We investigated five classes of factors that might raise family needs or constrain mothers' abilities to manage a budget: physical health, mental health, substance dependence, domestic violence, and lack of access to transportation. Rates of physical health problems, mental health problems, domestic violence problems, and transportation problems were quite high in the post-TANF welfare population. Almost nineteen percent of mothers had a physical health problem. Within the last twelve months, twenty-seven percent had met the diagnostic criteria for major depression, fourteen percent had experienced PTSD, and fifteen percent had suffered severe physical abuse. These rates of mental health[84] and

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[78] *See* Alaimo et al., *supra* note 30, at 420.

[79] *See id.* at 421.

[80] *See* Mayer & Jencks, *supra* note 50, at 91–98 (using food, housing, and medical care to measure hardship).

[81] *See* EDIN & LEIN, *supra* note 19, at 17 (1997) (using medical care, housing, warm clothing, city and welfare reliance to measure hardship).

[82] *See id.* at 112–19 tbls. 4-9 to 4-10 (including the categories no food, hunger, doctor, utilities cut-off, at least two housing-quality problems, evicted, homeless, winter clothes, and no telephone).

[83] Very few respondents (5%) who were employed worked less than 20 hours per week.

[84] *See* Danziger et al., *supra* note 14, at 16.

domestic violence problems[85] are two to four times higher than those reported in national samples of women.[86] Almost half of all recipients reported that they had either no car or no license. The one surprise in these numbers, given stereotypical views of welfare mothers, was the low level of self-reported substance dependence: three percent for alcohol and three percent for drug dependence. These are similar to levels reported for national samples of women.

In sum, large minorities of the post-TANF welfare population have unmet food, shelter, and utility needs. Slightly less than half of this population was not working at the time of the survey, and many recipients were high school dropouts or had few work skills. Many recipients also faced a number of constraints that could increase family needs and make managing a budget difficult: physical health problems, mental health problems, domestic violence, and lack of access to transportation.

B. *Bivariate Analyses*

In this Section we examine how the prevalence of food insecurity and material hardship vary across different demographic groups categorized by work status, by skill level, and by constraints faced by recipients. Table 2 reports the incidence of food insufficiency and material hardship for the different demographic groups. Table 3 reports the incidence of food insufficiency and material hardship for recipients with different levels of human capital. Finally, Table 4 reports the outcome measures by physical and mental health status, by whether the recipient has recently experienced severe abuse or not, and by whether the recipient has a car and/or license.

The prevalence of food insufficiency and material hardship does not vary much by welfare recipients' demographic characteristics with two exceptions. First, older recipients experience more food insufficiency. Thirty-two percent of recipients over age thirty-five years report sometimes or often not having enough to eat compared to twenty-two percent for recipients under age thirty-five years. Long-term welfare recipients report more food insufficiency and material hardship. The finding that older women are more likely to be food insufficient is consistent with past research on food insufficiency in the general population.[87] The finding that income has no association with either food insufficiency or material hardship is inconsistent with findings from analyses of general populations that show a substantial income effect.[88] This may not seem surprising given the low range of income in the WES sample, however Alaimo and others

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[85] *See id.* at 17.

[86] *See* Kessler et al., *supra* note 41, at 8.

[87] *See* Blaylock & Blisard, *supra* note 27, at 965.

[88] *See* Alaimo et al., *supra* note 30, at 421 fig.1; Blaylock & Blisard, *supra* note 27, at 964; Mayer & Jencks, *supra* note 50, at 111–12.

did find that income predicted food insufficiency in the low- income population.[89]

Second, food insufficiency and material hardship vary greatly by employment status and human capital. Nonworking recipients, recipients with little work experience, recipients with few job skills, and high-school dropouts all reported higher than average levels of food insufficiency and/or material hardship. Rates of food insufficiency or material hardship for women with low levels of work experience are particularly high—thirty-eight percent and forty-eight percent respectively. The comparable figures for recipients with higher levels of experience are twenty-two percent and thirty-four percent.

Some researchers have also found that employment status and human capital are positively correlated with food insufficiency and/or material hardship. Alaimo and others reported that in the general population, employment and high school completion[90] were negatively correlated with food insufficiency. Mayer and Jencks[91] reported a positive correlation between years of schooling and absence of hardships. Edin and Lein reported that working single mothers experienced more hardships than did welfare mothers,[92] but this result was driven by the inclusion of health needs in their hardship measure.[93]

We examined a large number of possible constraints that might increase family needs and reduce women's coping abilities: physical health problems, mental health problems, alcohol and drug dependence, severe physical abuse by a partner, and lack of a car and/or license. The incidence of food insufficiency and material hardship are higher than average for women who experience any of these constraints. All the differences in unmet needs between women with and without a given constraint are large and significant.

C. *Multivariate Results*

Table 5 reports the coefficient estimates from the multivariate logistic regressions. Column 1 of Table 5 reports the results from regressing food insufficiency on demographic, work, and human capital measures. This specification is similar to specifications used in previous studies of food insufficiency. Column 2 of Table 5 reports results from regressing food insufficiency on the full set of predictor variables. This is one of the first studies to estimate how physical health, mental health, substance dependence, domestic violence, and lack of transportation are related to food insufficiency. Columns 3 and 4 of Table 5 report the results from a comparable pair of regressions predicting material hardship.

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[89] *See* Alaimo et al., *supra* note 30, at 421.

[90] *See id.*

[91] *See* Mayer & Jencks, *supra* note 50, at 100 tbl.4.

[92] *See* EDIN & LEIN, *supra* note 19, at 117 tbl.4-9.

[93] *See id.* at 117.

Results are quite comparable across the regressions on demographic, work, and human capital variables.[94] None of the demographic measures is significantly associated with either food insufficiency or material hardship with one exception: families with more adults are less likely to experience material hardship. Two of the four work and human capital measures are significantly associated with both food insufficiency and material hardship. Recipients who completed high school, and recipients with higher levels of work experience are all less likely to experience food insufficiency and material hardship than are otherwise similar recipients. Recipients who are employed twenty or more hours per week are less likely to experience material hardship.

We next add measures of constraints to the regressions of food insufficiency and material hardship.[95] In the material hardship model, the coefficient on the employment measure dropped by more than half and became insignificant when the constraints measures were added. It seems likely that one reason working recipients experience less material hardship is that working recipients are less likely to have physical health, mental health, substance dependence, and domestic violence problems. A similarity across the two sets of regressions is that the coefficients on the demographic and human capital measures change very little when the constraint measures were added.

Most of the constraints have significant associations with food insufficiency and/or material hardship. Alcohol dependent and drug dependent recipients are more likely to experience food insufficiency and material hardship. These associations are only significant in the regressions predicting food insufficiency. Women with physical health problems, women who have experienced severe physical abuse within the last year, and women who meet the diagnostic criteria for major depression in the last year all report significantly more food insufficiency and material hardship than do women without these problems. Lack of a car or license and post-traumatic stress disorder (PTSD) do not significantly predict either food insufficiency or hardship.

To sum up, these regressions show that the number of adults in the household, higher levels of work experience, and high school graduation are associated with lower levels of material hardship. Working twenty or more hours per week is also associated with less material hardship, but a large part of this association is due to the fact that working recipients are less likely to have constraints such as physical and mental health problems. The following constraints—alcohol dependence, drug dependence, major depression, severe physical abuse, and a physical health problem—are associated with higher levels of food insufficiency and material hardship.

Table 6 reports the results when we convert selected estimated regression coefficients reported in Columns 2 and 4 of Table 5 into probabilities. Eight of the

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[94] *See infra* tbl.5, cols.1, 3.

[95] *See id.* cols.2, 4.

independent variables were significantly associated with food insufficiency and/or material hardship. These 8 variables are listed in Rows 2–9 in the far left column of Table 6. The first column of numbers in Table 6 reports the prevalence of each of these 8 characteristics in the WES (as reported previously in Table 1). For example, thirty-one percent of women are high-school dropouts and twenty-seven percent meet the criteria for major depression.

The second column of numbers in Table 6 reports the estimated probabilities that a typical recipient in the sample[96] is likely to sometimes or often not have enough food, given a particular set of values on the predictor variables listed in Rows 2–9. Column 4 of Table 6 reports similar information for material hardships. Column 2, Row 1, for instance, reports the probability that a typical woman who has *only 1 adult* in the household, and *none* of the characteristics listed in rows 3–9[97] is food insufficient. Column 2 of Rows 2–9 reports the probability of food insufficiency for a typical woman with *only* the characteristic listed in that row.

The numbers in Column 3 of Rows 2–9 report the difference in probability of food insufficiency for a woman with none of the characteristics listed in Rows 2–9 and the probability of food insufficiency for a woman with only the single characteristic in that Row. For example, 15.1% of women have low work experience. There is a 8.3 percentage point difference in the probabilities of food insufficiency between women who have low work experience and those who do not. The largest individual effects for food insufficiency are for alcohol dependency and drug dependency—13% and 15%, respectively—but only 2.7% of respondents are alcohol dependent, and only 3.4% are drug dependent. These are big effects, but they only apply to a small percentage of recipients. A number of other characteristics have somewhat smaller effects but are much more prevalent in the post-TANF welfare population. For instance, the effects of major depression on food insufficiency and material hardship are 8.5% and 11.6% respectively, and more than 1 in 4 recipients meet the criteria for major depression. Similarly, the effect of being a high-school dropout on material hardship is 8.3%, and over 30% of recipients were high-school dropouts.

V. SUMMARY AND POLICY IMPLICATIONS

In the post-TANF welfare population sampled in this study, large numbers of families do not consistently meet their families' basic needs for food, shelter, and utilities. One in four families sometimes or often did not have enough to eat. More than one in three families experienced one or more of the following hardships: not

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[96] A typical recipient is white, age 30 years, currently on welfare, with 2 children at home, with an income of $1,250 per month, currently working, has 4 or more work skills, and lacks a car and/or license.

[97] The items consist of low work experience, less than high-school education, alcohol dependent, drug dependent, major depression, PTSD, severe physical abuse, and poor health.

having enough to eat, being evicted, homelessness, or having utilities cut off. These numbers likely underestimate the degree of unmet needs in the post-TANF welfare population because we investigated only a limited set of needs.

Post-TANF welfare mothers lacked economic resources and had low levels of human capital. More than thirty percent of the recipients we examined did not have a high-school diploma; fifteen percent had little or no work experience; and forty-three percent worked less than twenty hours per week (most of these did not work at all). Additionally, the post-TANF welfare population faced a number of constraints that could increase their needs and reduce their coping abilities. A large minority of recipients had a physical health problem, a mental health problem, and/or had experienced domestic violence within the last year. Half of the recipients lacked a car and/or license.

Surprisingly, income was unrelated to both food insufficiency and material hardship in the post-TANF welfare population. Perhaps this is because of the limited range of income in the sample. Working recipients were less likely than non-working recipients to experience material hardship, but the association of work with food insufficiency and material hardship became much weaker when we controlled for recipients' physical and mental-health status, substance dependence, and experiences of domestic violence. High school graduates and recipients with higher levels of work experience reported less food insufficiency and material hardship than did high school dropouts. This is consistent with past research.[98]

This study is one of the first to estimate the associations of physical health problems, mental disorders, domestic abuse, and substance dependence with food insufficiency and material hardship. All of these factors had large and positive associations with our measures of unmet material needs. Further, because women in the post-TANF welfare population had disproportionately high rates of physical health problems, major depression, and domestic abuse, this suggests that these problems may seriously constrain the abilities of the post-TANF recipients to meet their families' basic material needs.

How are children faring under PRWORA? The good news is that the majority of recipients and former recipients in Michigan are not experiencing food insufficiency and material hardships. The bad news is that sizeable minorities of post-TANF welfare families report not having enough food and having unmet food, housing, or utilities needs. For children born into and growing up in these households, prolonged exposure to food insufficiency and disruptions associated with evictions and homelessness could have long-term and substantial developmental disadvantages. Food and dietary insufficiency can have a devastating effect on the following pregnancy outcomes: inadequate maternal weight gain, for example, is associated with low birthweight, small for gestational

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[98] *See* Mayer & Jencks, *supra* note 50, at 100.

age births, and preterm delivery.[99] Lack of folate in early pregnancy causes neural tube defects,[100] and appears to affect fetal weight gain and duration of gestation.[101] Recent studies have also implicated prenatal nutrition deficiency in the etiology of schizophrenia and affective disorders.[102] There is also accumulating evidence, albeit indirect, for maternal nutrition effects in the development of hypertension, heart disease, and Type II diabetes.[103] Many studies have shown that food insufficiency and dietary insufficiencies are associated with both short-term and long-term consequences for children.[104] Hunger has been linked with psychosocial dysfunction and academic impairment in poor children,[105] and may be a contributing factor to later aggressive behavior and school dropout in adolescence. A study of 204 children in four inner-city schools found that those classified as hungry or at risk of hunger were twice as likely to be classified as impaired by parents and teachers using standard measures of child psychosocial functioning.[106] These children had higher teacher-reported levels of hyperactivity, absenteeism and tardiness than children not

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[99] *See* Jennifer D. Parker & Barbara Abrams, *Prenatal Weight Gain Advice: An Examination of the Recent Prenatal Weight Gain Recommendations of the Institute of Medicine*, 79 OBSTETRICS & GYNECOLOGY 664, 667–68 (1992); *see also* Judith E. Brown & Emily S.B. Kahn, *Maternal Nutrition and the Outcome of Pregnancy*, 24 CLINICS PERINATOLOGY 433, 441 (1997).

[100] *See* Theresa O. Scholl et al., *Dietary and Serum Folate: Their Influence on the Outcome of Pregnancy*, 63 AM. J. CLINICAL NUTRITION 520, 520 (1996).

[101] *See id.* at 522–23.

[102] *See, e.g.*, Alan S. Brown et al., *Increased Risk of Affective Disorders in Males After Second Trimester Prenatal Exposure to the Dutch Hunger Winter of 1944–45*, 166 BRITISH J. OF PSYCHIATRY 601, 601 (1995) (examining the Dutch famine study and the possible relationship between prenatal famine during the second trimester of pregnancy and affective psychosis); Brown & Kahn, *supra* note 99, at 444 (comparing rates of schizophrenia and famine conditions in the first and third trimester of pregnancy); Ezra Susser et al., *Schizophrenia After Prenatal Famine*, 53 ARCHIVES OF GEN. PSYCH. 25, 25 (1996) (noting a twofold increase in the risk for schizophrenia in children conceived at the height of the Dutch famine); Mervyn Susser & Zena Stein, *Timing in Prenatal Nutrition: A Reprise of the Dutch Famine Study*, 52 NUTRITION REVS. 84, 92 (1994) (finding famine exposure in early pregnancy led to higher rates of schizophrenia and conditions antecedent to schizophrenia).

[103] *See* Brown & Kahn, *supra* note 99, at 441 tbl.4.

[104] *See* Wayne R. Bidlack, *Interrelationships of Food, Nutrition, Diet and Health: The National Association of State Universities and Land Grant Colleges White Paper*, 15 J. AM. C. NUTRITION, 422–33 (1996) (explaining the comprehensive review of research on the relationships between nutrition and human development);Theodore D. Wachs, *Relation of Mild to Moderate Malnutrition to Human Devolpment: Correlational Studies*, 125 J. NUTRITION, 2245S–2254S (1995).

[105] *See* Michael J. Murphy, et al., *Relationship Between Hunger and Psychological Functioning in Low-Income American Children*, 37:2 J. AM. ACADEMY CHILD ADOLESCENT PSYCHIATRY, 163, 168 (1998).

[106] *See id.*

classified as hungry or at-risk.[107] Kleinman and others report that in a sample of poor children aged six to twelve years, hunger and food insufficiency were associated with higher rates of behavioral, emotional, and academic problems.[108]

What can be done to help these children? Our research provides some clues to identifying the population of children who are at risk of food insufficiency. Mothers in families that experience food insufficiency and/or material hardship are disproportionately likely to be high school dropouts, to have little work experience, to have physical and mental health problems, and to have experienced domestic violence. These maternal characteristics could be used to develop screening protocols for use by caseworkers in social service agencies and in other settings in which personnel have contact with large numbers of mothers and children at-risk. For example, screening for food insufficiency could be done by health care providers serving low-income mothers and children, by mental health professionals, by day-care providers, by school personnel, and by staff in shelters for battered women. However, because many of the risk factors we identified are common among the mothers served by such agencies, direct questioning about food insufficiency may be more productive.

Identification of mothers and children at risk of food insufficiency will be ineffective, however, unless food assistance is available and readily accessible. Nutritional interventions targeting poor children have clearly demonstrated beneficial effects, and our findings suggest the importance of access to and adequate funding for such programs as food stamps, the WIC program, and school breakfast and lunch programs.[109] Policymakers can also be urged to incorporate standards for nutrition services directed to children, including accountability for child-specific outcome measures, not just reduction of welfare enrollment.[110] In addition, legislation with child-specific language can be proposed to ensure food security.[111]

These results suggest some strategies to help mothers as well as children. For instance, education and training programs might improve welfare recipients' abilities both to manage their household budgets and to plan meals using nutritious and inexpensive food sources. Education and training could also

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[107] *See id.*

[108] *See* Ronald E. Kleinman et al., *Hunger in Children in the United States: Potential Behavioral and Emotional Correlates*, 101 PEDIATRICS e3, ¶¶ 1–3 (Nov. 23, 1999) <http://www.pediatrics.org/cgi/content/full/101/1/e3> ("[T]hose defined as hungry . . . were significantly more likely to have clinical levels of psychosocial dysfunction . . . . [V]irtually all behavioral, emotional, and academic problems were more prevalent in hungry children . . . ." *Id.* at ¶ 3.); *see also* Murphy, et. al., *supra* note 105, at 163–70 (reporting that hungry children are twice as likely as not-hungry children to be classified as having impaired functioning).

[109] *See* Murphy, et al., *supra* note 105; Willis, et al., *supra* note 12, at 871–75.

[110] *See* Willis, et al., *supra* note 12, at 871–75.

[111] *See id.*

increase the likelihood of securing and retaining employment at a wage adequate to feed a family. Similarly, health and social service interventions such as improved access to quality health care, treatment of mental health problems, and access to services for battered women might help alleviate problems that may be increasing recipients' needs while reducing their abilities to cope.

Finally, the findings of this study suggest that the current emphasis in some states on denying benefits to recipients who test positive for drugs may be misplaced and may further harm children. Rates of self-reported alcohol and drug dependence are low in the post-TANF welfare population. But the minority of women who are dependent on drugs are at high risk of food insufficiency and material hardship. And the denial of benefits to such a mother could result in not only a major reduction in resources affecting children—including housing, food stamps, and employment—but also the treatment needed to overcome drug dependence. The consequences could be severe, as children of women drug offenders who do not receive adequate treatment are at risk of neglect and abuse, and ultimately of out of home placement.[112]

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[112] *See* HEALTH, EDUC., & HUMAN SERVS. DIV., U.S. GEN. ACCOUNTING OFFICE, PUB. GAO/HENS-94-98, FOSTER CARE: PARENTAL DRUG ABUSE HAS ALARMING IMPACT ON YOUNG CHILDREN, REPORT TO THE CHAIRMAN, SUBCOMMITTEE ON HUMAN WAYS AND MEANS 2 (1994) (citing letter of Jane L. Ross).

TABLES

Table 1. Individual Characteristics from WES Sample Used in Logistic Regression Analysis (n=733)

Variable	Method of Computation/Unit	Mean
Outcome Measures		
Food Insufficiency	Reported sometimes or often not having enough food	24.40
Material Hardship	Experienced one or more of the following: food insufficiency, eviction, homelessness, or utilities cut-off	36.20
Demographic Measures		
African-American	Coded as 0 or 1	56.00
Age	Age in 1997	29.77
Number of adults in household	Number of adults in household	1.53
Number of children in household	Number of own children in household	2.11
Currently receiving welfare	Coded as 0 or 1	72.31
Years on welfare	Years since age 18 in which received AFDC/FIP	7.34
Total monthly household income	Income from all sources for all household member	$1,245.
Work and Human Capital Measures		
Employed 20 hours or more/week	Coded as 0 or 1	58.00
Less than high school education	Coded as 0 or 1	31.24
Worked less than 20 percent since age 18	Coded as 0 or 1	15.14
Previously used fewer than 4 job skills	Coded as 0 or 1	20.74
Physical and Mental Health		
Mother has health problem	Coded as 0 or 1	19.10
Major depressive episode	CIDI-Short Form Coded as 0 or 1	27.00
Post-traumatic stress disorder	CIDI-Short Form Coded as 0 or 1	14.46
Drug dependence	CIDI-Short Form Coded as 0 or 1	3.41
Alcohol dependence	CIDI-Short Form Coded as 0 or 1	2.73
Domestic Violence		
Current severe abuse	Coded as 0 or 1	15.14
Transportation Problem		
Has no car and/or license	Coded as 0 or 1	47.00

Table 2. Demographic Characteristics (N=733)

	Percent Food Insufficient	Percent Material Hardship
African-American	25.2	38.4
White	23.5	33.3
Age 18-24	21.9^^	38.3
Age 25-34	22.0^^	33.6
Age 35+	31.6^^	38.5
1 adult in household	25.2	38.9
2 or more adults in household	23.3	32.2
1 child in household	20.9	33.3
2 children in household	25.3	35.9
3+ children in household	26.1	38.7
Currently receiving welfare	24.9	37.5
Not currently receiving welfare	23.2	32.5
0-7 years on welfare	20.3**	32.9**
7+ years on welfare	30.5**	41.0**
Monthly household income $0-$1,250	26.0	38.7
Monthly household income $1,250 or more	22.0	32.2

Note: ** Indicates row characteristic and food insufficiency (material hardship) fail the Chi-square test of independence at the .05 level or higher.

^^ Indicates the relationship between being age 35 and older versus age 18–34 and food insufficiency fails the Chi-square test of independence at the .05 level.

Table 3. Human Capital Characteristics (N=733)

	Percent Food Insufficient	Percent Material Hardship
Working 20 hours or more	21.1**	31.6**
Not working 20 hours or more	29.1**	42.5**
Less than high school education	31.0**	46.7**
High school education or greater	21.4**	31.3**
Previously used 4 or more skills on the job	23.1*	34.9
Previously used fewer than 4 skills on the job	29.6*	40.8
Worked less than 20 percent of years since age 18	37.8**	47.7**
Worked more than 20 percent of years since age 18	22.0**	34.1**

Note: ** Indicates row characteristic and food insufficiency (material hardship) fail the Chi-square test of independence at the .05 level or higher.

Table 4. Constraint Measures (N=733)

	[illegible]	[illegible]
Physical Health		
Mother has health problem	38.6**	51.4**
Mother does not have health problem	21.1**	32.5**
Mental Health		
Major depressive episode	39.1**	50.8**
No major depressive episode	19.0**	30.8**
Post-traumatic stress disorder	37.7**	52.8**
No post-traumatic stress disorder	22.2**	33.3**
Drug dependence	60.0**	64.0**
No drug dependence	23.2**	35.2**
Alcohol dependence	55.0**	55.0*
No alcohol dependence	23.6**	35.6*
Domestic Violence		
Current severe abuse	36.0**	53.2**
No current severe abuse	22.3**	33.1**
Transportation Problems		
Lack of car and/or driver's license	27.4**	43.7**
Car and driver's license	21.8**	29.5**

Note: ** Indicates row characteristic and food insufficiency (material hardship) fail the Chi-square test of independence at the .05 level or higher.

Table 5. Logistic Regression Analysis Predicting Food Insufficiency and Material Hardship

Demographic Characteristics	Food Insufficiency		Material Hardship		
	Model (1)	Model (2)	Model (1)	Model (2)	
African-American	0.0555	0.1761	0.1501	0.2012	B
	0.0165	0.1963	0.1660	0.1761	S.E.
	1.0571	1.1925	1.1619	1.2229	Odds Ratio
Age	0.0165	0.0109	-0.0110	-0.0148	
	0.0163	0.0172	0.0152	0.0160	
	1.0167	1.0109	0.9891	0.9853	
Number of adults in household	-0.1171	-0.1258	-0.2850	-0.3139	
	0.1323	0.1395	0.1211	0.1271	
	0.8895	0.8818	0.7520	0.7306	
Number of children in household	0.0269	0.0314	-0.0001	0.0093	
	0.0760	0.0786	0.0702	0.0728	
	1.0273	1.0319	0.9999	1.0093	
Currently receiving welfare	-0.0043	-0.0123	0.0521	0.0068	
	0.2058	0.2153	0.1851	0.1928	
	0.9957	0.9877	1.0535	1.0068	
Years on welfare	0.0182	0.0154	0.0178	0.0131	
	0.0216	0.0227	0.0204	0.0213	
	1.0184	1.0155	1.0179	1.0132	
Total monthly household income	0.00004	0.00004	0.0001	0.0001	
	0.0001	0.0002	0.0001	0.0001	
	1.0000	1.0000	1.0001	1.0001	
Employed 20 hours or more/week	-0.2919	-0.1207	-0.3288	-0.1518	
	0.1937	0.2062	0.1738	0.1840	
	0.7468	0.8863	0.7198	0.8592	
Less than high school education	0.3463	0.2951	0.5157	0.4020	
	0.1992	0.2147	0.1798	0.1918	
	1.4139	1.3433	1.6748	1.4948	
Previously used fewer than 4 job skills	-0.0828	0.0614	-0.1092	-0.0669	
	0.2400	0.2525	0.2192	0.2294	
	0.9205	1.0633	0.8965	0.9353	

Table 5 (continued)

Demographic Characteristic	[illegible]	[illegible]	[illegible]	[illegible]
Worked less than 20 percent since age 20	0.5375	0.6524	0.4346	0.5039
	0.2564	0.2693	0.2439	0.2539
	1.7117	1.9202	1.5444	1.6552
Mother has health problem		0.5680		0.5611
		0.2300		0.2165
		1.7647		1.7525
Major depressive episode		0.6644		0.5437
		0.2059		0.1915
		1.9433		1.7224
Post-traumatic stress disorder		0.2653		0.3598
		0.2569		0.2398
		1.3038		1.4331
Drug dependence		1.0378		0.6629
		0.4582		0.4693
		2.8230		1.9405
Alcohol dependence		0.9121		0.3064
		0.5203		0.5285
		2.4894		1.3585
Current domestic violence		0.4650		0.5301
		0.2557		0.2355
		1.5919		1.6991
Has no car and/or license		-0.1202		0.2772
		0.2144		0.1884
		0.8868		1.3194
Constant	-1.7599	-2.2342	-0.1618	-0.6964
	0.5765	0.6203	0.5254	0.5594
Log likelihood	789.593	738.785	926.595	877.754
Df	11	18	11	18

Table 6. Effects of Selected Characteristics on Whether a Recipient's Family Experiences Food Sufficiency and Material Hardship

Characteristics	Prevalence in WES	Predicted Probability of Food Insufficiency	Difference in Probability of Food Insufficiency without Characteristic	Predicted Probability of Material Hardship	Difference in Probability of Material Hardship without Characteristic
None of the characteristics in rows listed below		11.25		25.41	
Number of adults increases from 1 to 2	40.50	10.05	-1.20	20.09	-5.32**
Low work experience	15.14	19.57	8.32**	36.06	10.65**
Less than high school education	31.24	14.55	3.30	33.74	8.33**
Alcohol Dependent	2.73	23.99	12.74*	31.64	6.23
Drug Dependent	3.41	26.35	15.10**	39.80	14.39
Major Depression	27.00	19.76	8.51***	36.98	11.57***
Severe physical violence	15.14	16.79	5.54*	36.66	11.25**
Poor health	19.10	18.28	7.03**	37.39	11.98***

*significant at .10 in Model 2, Table 5
** significant at .05 in Model 2, Table 5.
***significant at .01 in Model 2, Table 5.
Given that the respondent is white, age 30, is currently receiving welfare, has received welfare for 7 years, has two children at home, has an income of $1250/month, is currently working, has four or more work skills, does not have post-traumatic stress disorder, and lacks a car and/or license.